

REMARKS

I. Status of the Application

Claims 21-41 are pending in this application. In the January 23, 2006 office action, the Examiner:

1. Allowed claims 21-36; and
2. Rejected claims 37-41 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,856,741 to Hasegawa (hereinafter "Hasegawa").

In this response, the applicants have amended claims 37-40 to better clarify the inventions claimed therein. Applicants gratefully acknowledge the indication of allowability with respect to claims 21-36. Nevertheless, applicants respectfully traverse the rejections of the claims 37-41 in view of the foregoing amendments and the following remarks.

II. Claim 37

In the January 25, 2006 office action, the Examiner rejected claim 37 as allegedly being anticipated by Hasegawa. For reasons that will be discussed below, it is respectfully submitted that Hasegawa fails to teach or suggest each and every element of claim 37 as amended.

A. The Present Invention

Claim 37 is directed to a method for driving a switch connected to a rectifier arrangement in a switching converter which provides an output voltage from an input voltage. The method includes providing an output voltage signal that corresponds to an output voltage of the switching converter. As amended, the method of claim 37 further entails generating a control signal based on the output signal using a circuit that includes at least one energy storage device, and generating drive pulses based at least in part on the control signal. The method also includes monitoring for at least one critical state of the switching converter based on the output voltage signal. If a critical state is detected, then the generation of drive pulses is interrupted. Upon interrupting the generation of the drive pulses, the at least one energy storage device is at least partially discharged.

B. Hasegawa Does Not Teach Partially Discharging an Energy Storage Device in a Circuit that Generates a Control Signal from Which a Drive Pulse is Derived

As amended, claim 37 recites that the energy storage device which is partially discharged, as claimed, is an energy storage device *within a control signal generating circuit*. This circuit generates the control signal from the output voltage signal. Moreover, the drive pulses in the drive circuit are generated based at least in part on the generated control signal. Thus, the energy storage device that is discharged, as per claim 37, is at least part of a circuit that generates a control signal that is used, at least in part, as the basis for generating the drive pulses.

Hasegawa does not teach such an energy storage device, wherein the energy

storage device is at least partially discharged when the generation of pulses is interrupted.

In particular, it appears that the Hasegawa device generates two control different signals from which drive pulses are derived. These two control signals correspond to two different DC-DC converters. (See Hasegawa col. 6, lines 43-55 and Fig. 1). As will be discussed below, neither of these control signals is generated by a circuit having an energy storage device that is discharged as claimed.

In particular, the first control signal of Hasegawa is the signal at the output of the amplifier 2-5, and the second control signal is the signal at the output of the comparator (i.e. amplifier) 6-1. These are the only two control signals in Hasegawa upon which the generation of drive pulses is based. (See Hasegawa at Fig. 1). Of the circuits that generate those two control output signals, both include an energy storage device (battery 2-6 and capacitor 6-7). However, in contrast to claim 37, *neither of these energy storage devices is partially discharged when the generation of pulses is interrupted, as claimed.* Moreover, Hasegawa does not teach or suggest that these energy storage devices are partially discharged as claimed.

In particular, the battery 2-6 and the capacitor 6-7 are configured such that they would not appear to be capable of discharging upon interruption of the pulse generation by the oscillator circuit 2-4 or pulse drive circuit 5-2, respectively. Notably, Hasegawa does not teach otherwise.

Thus, Hasegawa does not teach “generating a control signal based on the output voltage signal using a circuit that includes at least one energy storage device, and generating drive pulses based at least in part on the control signal” and “at least partially

discharging the at least one energy storage device upon interrupting the generation of drive pulses”, as claimed in claim 37. While Hasegawa teaches two energy storage devices (capacitor 6-7 and battery 2-6) that are a part of circuits that generate control signals as claimed, *neither* of those two energy storage devices are at least partially discharged upon interruption of the generation of drive pulses, as claimed.

It is noted that, in the January 25, 2006 office action, the Examiner alleged that capacitors 4-1 and 4-2 constitute the claimed energy storage devices that are partially discharged. As amended, however, the energy storage devices of claim 37 are part of a circuit that generates a control signal upon which generation of drive pulses is at least partially based. The capacitors 4-1 and 4-2 are *not* part of a circuit that generates a control signal, wherein drive pulses are generate in part based on the control signal. The capacitors 4-1 and 4-2 are not in a circuit that affects the drive signal generated by the drive circuit 5-2 nor the oscillator 2-4. Accordingly, it is respectfully submitted that the Examiner’s reasoning for the anticipation rejection has been addressed by the amendment herein.

In conclusion, because Hasegawa does not teach “generating a control signal based on the output voltage signal using a circuit that includes at least one energy storage device, and generating drive pulses based at least in part on the control signal” and “at least partially discharging the at least one energy storage device upon interrupting the generation of drive pulses”, as claimed in claim 37, it is respectfully submitted that the rejection of claim 37 over Hasegawa should be withdrawn.

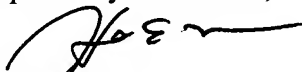
III. Claims 38-41

Claims 38-41 also stand rejected as allegedly being anticipated by Hasegawa. Claims 38-41 all depend from and incorporate all of the limitations of claim 37. Accordingly, the anticipation rejections of claims 38-41 should be withdrawn for at least the same reasons as those set forth above in connection with claim 37.

IV. Conclusion

For all of the foregoing reasons, it is respectfully submitted the applicant has made a patentable contribution to the art. Favorable reconsideration and allowance of this application is, therefore, respectfully requested.

Respectfully Submitted,



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